



US009638376B2

(12) **United States Patent**
Kang et al.

(10) **Patent No.:** **US 9,638,376 B2**

(45) **Date of Patent:** **May 2, 2017**

(54) **SUSCEPTOR**

USPC 219/759, 634, 730, 731, 651, 683, 686,
 219/707, 74, 121.33, 121.51, 121.55, 133,
 219/137.42, 137.9; 137/1, 15.03, 78.4,
 (Continued)

(75) Inventors: **Ju Jin Kang**, Gumi-si (KR); **Young Su Ku**, Gumi-si (KR)

(73) Assignee: **LG Siltron Inc.**, Gumi-Si (KR)

(56) **References Cited**

U.S. PATENT DOCUMENTS

4,275,282 A 6/1981 Miller
 4,721,462 A 1/1988 Collins, Jr.
 (Continued)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 414 days.

(21) Appl. No.: **13/593,709**

FOREIGN PATENT DOCUMENTS

(22) Filed: **Aug. 24, 2012**

CN 1526158 A 9/2004
 CN 1956145 A 5/2007
 (Continued)

(65) **Prior Publication Data**

US 2013/0048629 A1 Feb. 28, 2013

OTHER PUBLICATIONS

(30) **Foreign Application Priority Data**

International Search Report dated Jan. 2, 2013 issued in Application No. PCT/KR2012/006687.

Aug. 26, 2011 (KR) 10-2011-0085750
 Jan. 13, 2012 (KR) 10-2012-0004218

(Continued)

(51) **Int. Cl.**
H05B 6/64 (2006.01)
H05B 6/10 (2006.01)
 (Continued)

Primary Examiner — David Angwin
Assistant Examiner — Gyoungghyun Bae

(74) *Attorney, Agent, or Firm* — KED & Associates, LLP

(52) **U.S. Cl.**
 CPC **F17D 3/00** (2013.01); **C23C 16/4583**
 (2013.01); **C23C 16/4586** (2013.01); **H05B**
6/806 (2013.01); **Y10T 137/0318** (2015.04)

(57) **ABSTRACT**

A susceptor includes a first body including a plurality of first holes and a second body including a plurality of second holes. According to one arrangement, the second body is spaced from the first body to form a gap which allows a gas to pass from the second holes to the first holes. According to this or another arrangement, the first body is removably or rotatably coupled to the second body, or both. Rotation of the second body by a first amount or in a first direction brings at least one first hole in alignment with at least one second hole. And, rotation of the second body by a second amount or in a second direction causes a misalignment to occur between these holes.

(58) **Field of Classification Search**

CPC H05B 6/806; F17D 3/00; C23C 16/4584;
 C23C 16/45508; C23C 16/4585; C23C
 16/45519; C23C 16/4405; C23C 16/4583;
 C23C 16/46; H01L 21/68735; H01L
 21/68785; H01L 21/67109; C30B 25/12;
 C30B 29/06; C30B 31/14; C30B 25/10;
 F27B 14/061; F27B 14/14; F27B 14/0025

14 Claims, 10 Drawing Sheets

